Contents

INTRODUCTION 2
Universal Reprogrammer II Advanced Pass-Thru Device
Universal Reprogrammer II for Vehicle Diagnostics
Universal Reprogrammer II for ECM Reprogramming
Universal Reprogrammer II as a Standalone Device
Universal Reprogrammer II for other uses

GETTING TO KNOW UNIVERSAL REPROGRAMMER II 4
Connectors and Status Indicators
Vehicle Connector
Ethernet Lights
Analog Connector

SETTING UP THE UNIVERSAL REPROGRAMMER II 7
Powering Universal Reprogrammer II
Installing the EASE Reprogramming Assistant
EASE Service Programming Assistants
Error Reporting
Diagnostics with the Universal Reprogrammer II

REPROGRAMMING WITH J2534 11

SPECIFICATIONS 12

TROUBLESHOOTING AND SUPPORT 13
If you cannot communicate with Universal Reprogrammer II
If you need to recover from incorrect settings (Ethernet Only)
If you need to generate a log file for debugging
If you need to update drivers or firmware
Verify the network is configured correctly
If all else fails...

Introduction

Thank you for choosing Universal Reprogrammer II! This multi-protocol "PassThru" vehicle interface lets your PC communicate and perform ECU reprogramming on any modern vehicle diagnostic bus.

This Quick Start Guide covers only the initial setup of the Universal Reprogrammer II. This manual can always be acquired at www.obd2.com/support.

Universal Reprogrammer II Advanced Pass-Thru Device

The Universal Reprogrammer II is a fully compliant SAE J2534-1 device that incorporates many optional features published in J2534-2. As a PassThru device, it can be connected to a laptop, PC, or network and incorporates the following features:

- A variable 5-20V voltage supply, needed for several modern ECU reprogramming algorithms
- Short-to-ground capability on several pins, needed for other reprogramming algorithms
- Industry-standard cables and connectors, including the standard 26 pin MVCI vehicle interface
- A second CAN channel, dual or single wire, and support for the Chrysler SCI protocol (SAE J2610)
- Support for wireless Ethernet as a host interface
- 6 general purpose analog inputs for measuring temperature or voltage
- The rugged aluminum case, standard connectors, and non-slip rubber end caps make the Universal Reprogrammer II ideal for in-vehicle testing and other harsh environments.

The Universal Reprogrammer II has been carefully designed and tested to comply with OBDII protocols, which are used on most 1996 and newer cars and light trucks sold in the USA. However, some vehicle models are not in full compliance with these protocols for various reasons. In addition, the computer control systems or sensors on any given vehicle may be malfunctioning or out of specification.

Note: Vehicles manufactured outside of the USA may not comply with OBDII protocols, even though an SAE J1962 connector is located in the vehicle. Connection to vehicles manufactured for use outside of the USA is AT YOUR OWN RISK. EASE Diagnostics will not be held responsible for ANY direct, indirect or consequential damage that arises as a result of connecting to such a vehicle.

Universal Reprogrammer II for Vehicle Diagnostics

For repair shops and the aftermarket, the EASE Reprogramming Assistant will read and clear Diagnostic Trouble Codes, log generic and enhanced OBD2 data.

The Universal Reprogrammer II has optional software available from EASE Diagnostics for advanced diagnostics. Contact EASE Diagnostics and ask about the EASE Diagnostic Scan Tool for more information.

Universal Reprogrammer II for ECM Reprogramming

Because J2534-1 is a widely accepted standard, the Universal Reprogrammer II will work with a variety of ECM reprogramming applications. The EPA-Published regulation has led to publicly available reprogramming applications from almost every major automaker. These applications will allow independent repair shops to update the calibrations on newer automobiles.

Automakers and Tier 1 engineering groups commonly have special J2534-1 applications used for vehicle development. More information on this can be obtained by contacting EASE Diagnostics directly.

Universal Reprogrammer II as a Standalone Device

Universal Reprogrammer II contains a powerful microprocessor; it can host testing software internally and can act as a full, standalone computer. With few modifications, a J2534 program can be recompiled to run inside the Universal Reprogrammer II.

Universal Reprogrammer II for other uses

With all of the customizable software and features of the Universal Reprogrammer II, it also can be used for a variety of different purposes. With minimal development efforts, the Universal Reprogrammer II could accommodate the following operations:

- Crash Data Recovery Tool
- End-of-Line Manufacturing and Test Tool
- Fleet and rental vehicle long term data recording
- CAN Interface, J1939 Adapter, and Dealer service tool

Getting to Know Universal Reprogrammer II

Universal Reprogrammer II supports all modern vehicle diagnostic protocols including: J1850VPW, J1850PWM, CAN, ISO 15765, ISO 9141, ISO 14230/KWP2000, and Chrysler SCI

Your package includes: the Universal Reprogrammer II hardware, two types of Ethernet cables, a USB cable, an OBD2 Cable, and a CD including drivers and the Reprogramming Assistant.

Connectors and Status Indicators

Front Panel

There are 6 status lights on the front panel of Universal Reprogrammer II. For all new or upgraded units (v1.9.2 and later), these status lights are useful for troubleshooting the reprogrammer's connection to a PC.

Figure 1: Universal Reprogrammer II with USB and the (optional) Compact Flash slot

The yellow warning light indicates that Universal Reprogrammer II is communicating with the vehicle. Do not disconnect while this is illuminated! If you interrupt a reflash while the vehicle's ECU is blank or only partially programmed, the module may be unrecoverable. Refer to Table 1 for a description of the other status lights.

Table 1: Status lights on the front panel of Universal Reprogrammer II

#	Light	Description
	Power	Power (Solid Green)
1	Ethernet	Green indicates a good connection directly to a PC or to an existing Ethernet network.
2	USB	Green indicates a good USB connection. The PC has identified and configured Universal Reprogrammer II properly.
3	Wireless	Green indicates a good connection directly to a PC or to an existing wireless access point.
4	Vehicle	Yellow warns that Universal Reprogrammer II is talking to a vehicle. Blinks to indicate activity on the vehicle's network.
5	Fault	Red indicates a momentary network fault or a serious hardware failure. Please call technical support for assistance.

Rear Panel

Connections to the vehicle, Ethernet, analog inputs, and external programming voltage are available on the rear panel.

Figure 2: Rear panel with vehicle, analog, and Ethernet sockets

The external programming socket provides the user with access to the 5-20V programming voltage. This is used for Mitsubishi, Subaru or any other vehicle that needs voltage on an additional connector.

Vehicle Connector

The mating connector is a standard MVCI (Modular Vehicle Communication Interface), High Density DB-26.

Pin #	Function
1	CAN2 Single Wire
2	J1850PWM+ J1850VPW
3	CAN2+
4	Case Ground
5	Signal Ground
6	CAN+ (CAN-C only) SCI A Engine 5v-20v out
7	ISO-9141 K-line SCI A Engine SCI A Trans SCI B Engine
8	No Connect
9	SCI B Trans 5v-20v out or short-to-ground
10	J1850PWM-
11	CAN2- 5v-20v out
12	SCI B Engine 5v-20v out or short-to-ground
13	5v-20v out
14	CAN- (CAN-C only) SCI A Trans 5v-20v out
15	ISO L Line SCI B Trans Short-to-ground
16	Battery In (150mA @ 12 VDC)
17	Cable ID 2
18	Cable ID 1
23	+5 output (50mA fused)
26	Ground

Ethernet Lights

Use the standard Ethernet cable (black) to connect to an existing network, or use the crossover cable (blue with red ends) to connect directly to a laptop.

	Color	Description
Left	Green	Ethernet Activity
Right	Green	Ethernet Link Light

Analog Connector

The 12-bit analog inputs are setup for an input range of 0 to 27.5VDC and are electrically protected against reverse voltage and over voltage conditions. The Mating connector is a High Density DB-15

Pin #	Function	Direction
2	Channel 6	In
4	Channel 3	In
6	Battery Voltage	Out (200mA max)
8	Channel 4	In
10	Channel 1	In
12	Channel 5	In
14	Channel 2	In
1, 3, 5, 7, 9, 11, 13, 15	Ground	

Setting up the Universal Reprogrammer II

Powering Universal Reprogrammer II

First, determine how the Universal Reprogrammer II will receive power:

a) Vehicle power: The OBD-II cable provides power to the Universal Reprogrammer II from a vehicle. Most vehicles built after 1996 have an OBD-II port somewhere under the dash on the driver's side, as specified in SAE J1962.

b) Bench top power supply: When using the Universal Reprogrammer II on a bench, put power on pin 16 (VBATT) and ground on pin 5 (Signal Ground) or by plugging the OBD-II cable into the OBA.

When Universal Reprogrammer II is first powered-on, the lights will cycle through a self-test procedure. Remember that the Universal Reprogrammer II does not receive power from your PC's Ethernet or USB ports.

Installing the EASE Reprogramming Assistant

To install the Universal Reprogrammer II drivers and the EASE Reprogramming Assistant, insert the CD that came with your device. If the Demo Shield does not start automatically, browse to your CD/DVD drive in "My Computer" right click and click "auto play". Select from the Demo Shield Menu the Reprogramming Assistant and then EASE Reprogramming Assistant Install.

EASE Reprogramming Assistant - InstallAware Wizard
EASE Diagnostics
Welcome to the Install Wizard for the EASE Reprogramming Assistant
The Install Wizard will install the EASE Reprogramming Assistant on your computer.
WARNING: This program is protected by copyright law and international treaties.
To continue, click Next.
< Back
Next >
Cancel

This will install the USB driver and the EASE Reprogramming Assistant. At the end of the install the Reprogramming Assistant Configuration Utility will launch for you automatically. Make sure you configure the Reprogramming Assistant to use the Universal Reprogrammer II (see Section: Configurating the Reprogramming Assistant). After you have run the installer, connect your

Universal Reprogrammer II to a vehicle and connect the USB to your PC. The drivers will automatically be found.

The EASE Reprogramming Assistant Launcher

The EASE Reprogramming Assistant Launcher is where all the action begins. Whenever you go to program a vehicle, open the EASE Reprogramming Assistant.

From here, you can click on the manufacturer of the vehicle you want to reprogram. If EASE has a Service Programming Assistant available for the manufacturer the Assistant will be loaded (see section: EASE Service Programming Assistants). If an Assistant is not available the manufacturer's website will be loaded where you can purchase a subscription or find information about how to reprogram a vehicle.

EASE Service Programming Assistants

The EASE Service Programming Assistants are programs that are designed to help you program a specific OEM's vehicle. The Assistants are manufacturer dependent and are full of useful utilities and information designed to make your programming experience as easy as possible. Each Assistant provides a wizard to walk you through the process of preparing for the programming process. They also provide links to the OEM's Website and any known relearn information required after reprogramming the vehicle. EASE will continue to update and include new information into the Assistants to improve your programming power even more.

Not only will the Service Programming Assistants help with the reprogramming process. They also offer basic diagnostic information from the vehicle before and after the programming process. This includes Diagnostic Trouble Codes, I/M status monitors, and Calibration information when available. (See the online videos for a complete overview of the Service Programming Assistants http://www.obd2.com)

Error Reporting

There may come a time when you are having trouble with J2534 communications. EASE has developed a tool that enables logging and error reporting for the Universal Reprogrammer II and gives the Tech Support team at EASE Diagnostics good insight into a problem.

To turn Error Reporting on, run the EASE Reprogramming Assistant Launcher from the shortcut on your desktop. Once the launcher is running, click the configure button in the bottom left and it will launch the Reprogramming Assistant Configuration Utility. Make sure the "Universal Reprogrammer II is selected and click "Error Report". Follow the Error Report Wizard and it will automatically connect to the Internet and send the Error Report to an EASE Server for analysis. If you do not have an Internet connection at the time you create the report, the wizard will give alternate options to send the report to EASE.

User-Configurable Options for Ethernet Users

The Universal Reprogrammer II offers web-based configuration. Start a web browser and type http://UnivReprog/ in the location bar.

! Some areas of the Universal Reprogrammer II website are password protected. Please enter user name "root" and password "powerful" to gain access to these areas.

To reset configuration to default, select "Boot Options" and click the "Load Factory Default Settings" button. If all else fails, hold down the black button on the front of the unit while powering on Universal Reprogrammer II to enter recovery mode.

1. On the PC, start a web browser and enter http://UnivReprog/ in the location bar.
2. On the Universal Reprogrammer II main page, find the link to the **Installer v1.9.2.zip** file, under the section heading "**How do I get the Universal Reprogrammer II to be a J2534 PassThru device?**"
3. Click on the link and select **Run**.

This will install the Universal Reprogrammer II driver and register the Universal Reprogrammer II as an available PassThru device. Be sure to

select "EASE Diagnostics - Universal Reprogrammer II" on the configuration screen of your reprogramming software.

Initial setup of the Universal Reprogrammer II is now complete. The full *Universal Reprogrammer II Manual* has further instructions for using the Universal Reprogrammer II.

Diagnostics with the Universal Reprogrammer II

The Universal Reprogrammer II may be used as a PassThru diagnostics tool with additional software. The EASE Diagnostics Scan Tool is the leader in scan tool diagnostics and is available by contacting your local EASE Diagnostics Sales Representative or call EASE at (570) 587-7080.

Reprogramming with J2534

If you want to reprogram vehicles using OEM software, you can find a list below of websites that offer subscription software. Always check our website for an updated list.

Automaker	Website
BMW	http://www.bmwtechinfo.com/
Mini	http://www.minitechinfo.com/
Porsche	http://techinfo.porsche.com/
Chrysler, Jeep, Dodge	http://www.techauthority.com/
Ford, Lincoln, Mercury,	http://www.motorcraftservice.com/
Land Rover	http://www.landrovertechinfo.com/
Volvo	http://www.volvotechinfo.com/
Cadillac, Chevrolet, Daewoo, GM, GEO, Pontiac, Buick, Saturn, SAAB	http://www.gmtechinfo.com/
Acura, Honda	http://www.serviceexpress.honda.com/
Isuzu	http://www.isuzutechinfo.com/
Mazda	http://www.mazdatechinfo.com/
Mercedes	http://www.startekinfo.com/
Mitsubishi	http://www.mitsubishitechinfo.com/
Nissan	http://www.nissan-techinfo.com
Toyota, Lexus, Scion	http://techinfo.toyota.com/
Volkswagen	http://www.erwin.volkswagen.de/erWinVW
Audi	http://erwin.audi.de/erWinAudi

When reprogramming, always be sure the vehicle battery is fully charged and in good working condition. We recommend connecting an external battery charger to ensure a successful operation.

More information on how to use J2534 reprogramming can be found in the support section of EASE Diagnostic's website at www.obd2.com

Specifications

Universal Reprogrammer II Specifications:

Name	Value
Input Voltage Range	6VDC to 26VDC
Supply Current	320mA @ 6VDC 200mA @12VDC 170mA @15VDC
Operating Temperature	+0C to +60C ambient
Storage Temperature	-65C to +100C ambient
Size	1.25"H x 7.5"D x 5.25"W

Bus Protocols

- Primary CAN / ISO15765 / GMLAN
- Secondary CAN / ISO15765 / GMLAN (Dual or Single Wire)
- Ford SCP (J1850PWM)
- GM Class2 (J1850VPW)
- KWP2000 (ISO9141/14230)
- Chrysler SCI (J2610)

Other

- Compliant to SAE J2534 (Feb 2002) and SAE J2534-1 (Dec 2004)
- Compliant to ISO 22900-1 MVCI physical layer
- Programming voltage on J1962 pin 6, 9, 11, 12, 13, 14 or Aux
- Ground pins 9, 12, or 15

Note: Drawing current in excess of 200ma on a line configured for FEPS programming voltage may damage the Universal Reprogrammer II hardware. Avoid grounding any output pin configured for programming voltage! Battery Voltage is fused (auto reset) at 200mA.

Troubleshooting and Support

If you cannot communicate with Universal Reprogrammer II

Ask the following questions:

Does Universal Reprogrammer II have power, and is the green power LED illuminated?
Is the battery or power supply voltage between 6VDC and 15VDC, with correct polarity?
Could any firewall software be interfering with the Ethernet port?
Are you using the correct Ethernet cable: black for LAN, or blue for direct laptop connection?
Is the green status light illuminated for Ethernet, USB, or wireless?

If these issues have been addressed, verified, and you are still having trouble, please email ease-techsupport@obd2.com.

If you need to recover from incorrect settings (Ethernet Only)

If you are using Ethernet and would like to reset configuration to default, go to http://UnivReprog/, select "Boot Options" and click the "Load Factory Default Settings" button. Use the default username **root** and password **powerful** when requested.

If all else fails and you cannot reach the Universal Reprogrammer II webpage, hold down the black button on the front of the Universal Reprogrammer II while powering on Universal Reprogrammer II to enter recovery mode. This resets Universal Reprogrammer II to "Client Then Server" mode; it is useful when Universal Reprogrammer II is configured for an unknown static IP address or invalid boot options.

If you need to generate a log file for debugging

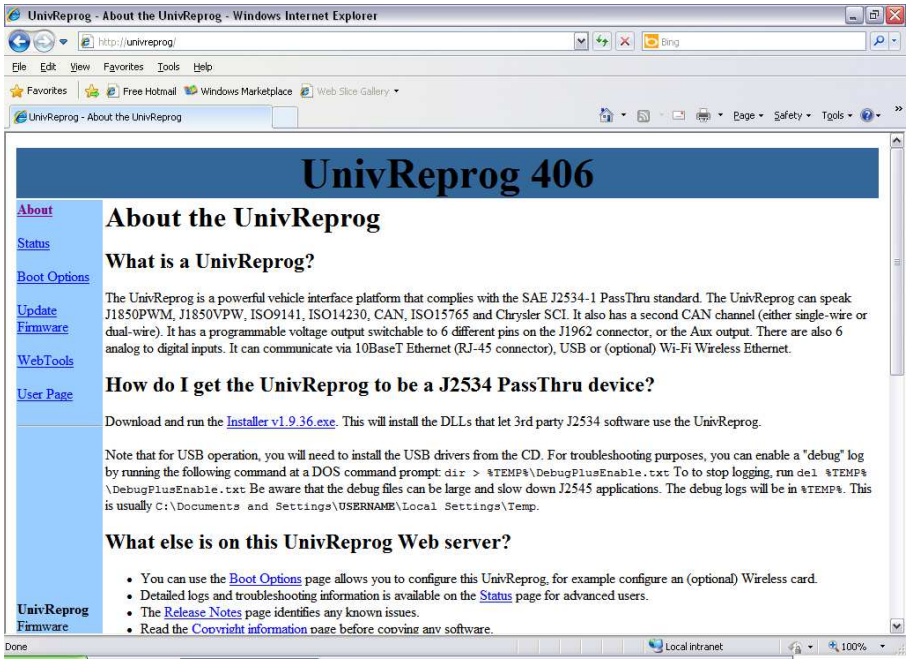
Please see previous section: Error Reporting

If you need to update drivers or firmware

Your Universal Reprogrammer II contains field-upgradeable firmware. Updates are regularly released which: include new features, improve performance, and correct problems. Please visit EASE Diagnostic's technical support page at:

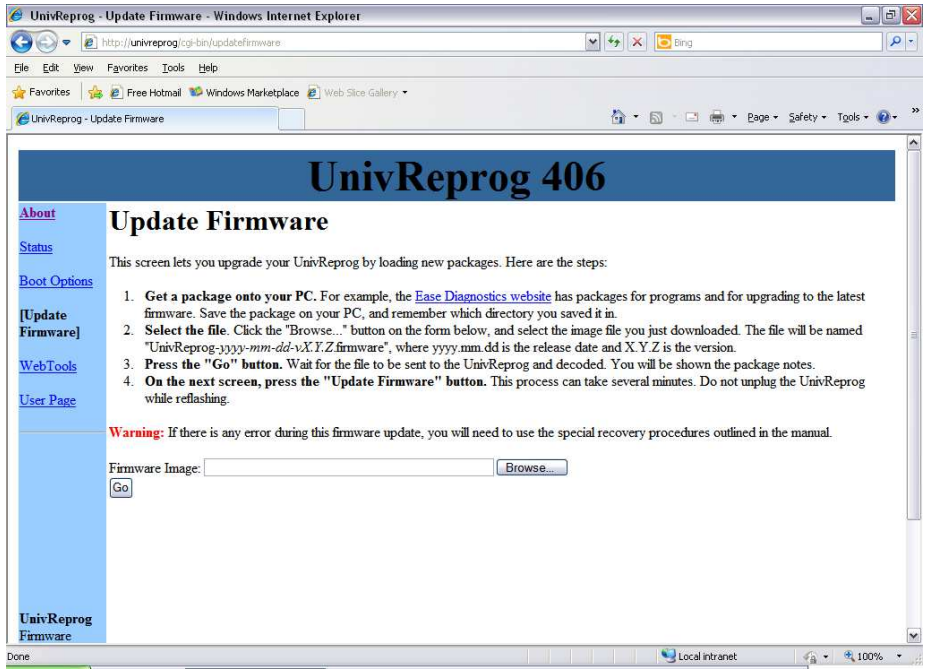
http://www.obd2.com/support/reprog/reprog_patch.htm

To update the Universal Reprogrammer II firmware: Apply power to the Reprogrammer and connect the Ethernet cable to Universal Reprogrammer II & the other end to your PC. Open up Internet Explorer and in the Address Bar type http://UnivReprog/.

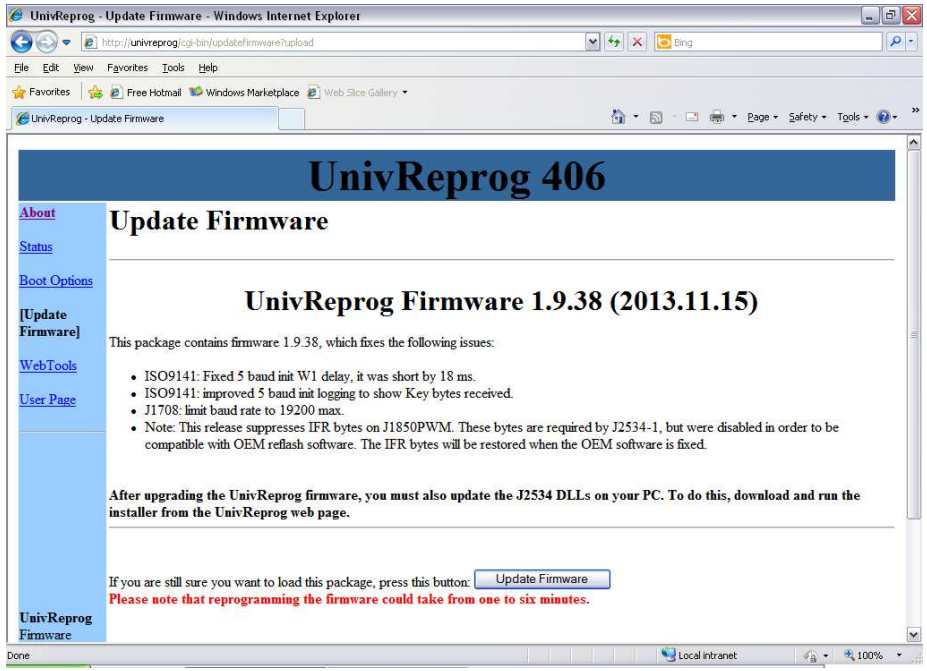

UnivReprog - About the UnivReprog - Windows Internet Explorer
UnivReprog 406
About
Status
Boot Options
Update Firmware
WebTools
User Page
UnivReprog Firmware
About the UnivReprog
What is a UnivReprog?
The UnivReprog is a powerful vehicle interface platform that complies with the SAE J2534-1 PassThru standard. The UnivReprog can speak J1850PWM, J1850VPW, ISO9141, ISO14230, CAN, ISO15765 and Chrysler SCI. It also has a second CAN channel (either single-wire or dual-wire). It has a programmable voltage output switchable to 6 different pins on the J1962 connector, or the Aux output. There are also 6 analog to digital inputs. It can communicate via 10BaseT Ethernet (RJ-45 connector), USB or (optional) Wi-Fi Wireless Ethernet.
How do I get the UnivReprog to be a J2534 PassThru device?
Download and run the Installer v1.9.36.exe. This will install the DLLs that let 3rd party J2534 software use the UnivReprog.
Note that for USB operation, you will need to install the USB drivers from the CD. For troubleshooting purposes, you can enable a "debug" log by running the following command at a DOS command prompt: dir > %TEMP%\DebugPlusEnable.txt To to stop logging, run del %TEMP%\DebugPlusEnable.txt Be aware that the debug files can be large and slow down J2545 applications. The debug logs will be in %TEMP%. This is usually C:\Documents and Settings\USERNAME\Local Settings\Temp.
What else is on this UnivReprog Web server?
You can use the Boot Options page allows you to configure this UnivReprog, for example configure an (optional) Wireless card.
Detailed logs and troubleshooting information is available on the Status page for advanced users.
The Release Notes page identifies any known issues.
Read the Copyright information page before copying any software.

Then on the configuration page in a web browser click Update Firmware. In the security box enter username **root** and password **powerful**:

Then select the new firmware file and click go.


UnivReprog - Update Firmware - Windows Internet Explorer
UnivReprog 406
About
Status
Boot Options
[Update Firmware]
WebTools
User Page
Update Firmware
This screen lets you upgrade your UnivReprog by loading new packages. Here are the steps:
1. Get a package onto your PC. For example, the Ease Diagnostics website has packages for programs and for upgrading to the latest firmware. Save the package on your PC, and remember which directory you saved it in.
2. Select the file. Click the "Browse..." button on the form below, and select the image file you just downloaded. The file will be named "UnivReprog-yyyy-mm-dd-vX.Y.Z.firmware", where yyyy.mm.dd is the release date and X.Y.Z is the version.
3. Press the "Go" button. Wait for the file to be sent to the UnivReprog and decoded. You will be shown the package notes.
4. On the next screen, press the "Update Firmware" button. This process can take several minutes. Do not unplug the UnivReprog while reflashing.
Warning: If there is any error during this firmware update, you will need to use the special recovery procedures outlined in the manual.
Firmware Image:
Browse...
Go
UnivReprog Firmware

On the next screen it will tell you what was updated in the new Firmware.


UnivReprog - Update Firmware - Windows Internet Explorer
UnivReprog 406
About
Status
Boot Options
[Update Firmware]
WebTools
User Page
Update Firmware
UnivReprog Firmware 1.9.38 (2013.11.15)
This package contains firmware 1.9.38, which fixes the following issues:
• ISO9141: Fixed 5 baud init W1 delay, it was short by 18 ms.
• ISO9141: improved 5 baud init logging to show Key bytes received.
• J1708: limit baud rate to 19200 max.
• Note: This release suppresses IFR bytes on J1850PWM. These bytes are required by J2534-1, but were disabled in order to be compatible with OEM reflash software. The IFR bytes will be restored when the OEM software is fixed.
After upgrading the UnivReprog firmware, you must also update the J2534 DLLs on your PC. To do this, download and run the installer from the UnivReprog web page.
If you are still sure you want to load this package, press this button:
Update Firmware
Please note that reprogramming the firmware could take from one to six minutes.
UnivReprog Firmware

Click the Update Firmware button. Once the firmware update is complete you will need to update your PC with the latest drivers. Visit the main configuration page, click refresh, and then click on the Installer link like a new installation.

Verify the network is configured correctly

There are two ways to do this:

1) Run the Universal Reprogrammer II Reprogramming Assistant to see if it connects. (Any of the SPAs should work.)

2) Try to connect to the Universal Reprogrammer II web page. Consult the networking section above for details.

If neither of these works, try:

- Turning off any firewall/antivirus software.
- Picking a different connection method. For example, try the fixed IP addressing mode. See the *Universal Reprogrammer II Manual* for details.
- Using recovery mode to make sure the Universal Reprogrammer II is configured correctly. Recovery mode is entered, by holding down the front button during power-on. See the *Universal Reprogrammer II Manual* for details on recovery.

If the Universal Reprogrammer II web page works, but applications don't work:

- The DLL may not be installed. Install the DLL using the instructions on page 7 of this quick start guide.
- The network settings may be incorrect. Specifically, verify that the Universal Reprogrammer II netmask setting is the same as the PC/laptop's netmask setting.
- The application may be looking for the wrong J2534 device. Make sure "Universal Reprogrammer II" is selected.

If applications work, but not the Universal Reprogrammer II web page:

- Verify that your web browser is not using a proxy. (Under **Tools >> Options >> Local Area Network Settings**)
- If your PC/Laptop is running firewall software, try turning it off to see if that is the problem.
- In DHCP Client mode, the IP address of the Universal Reprogrammer II can change. Enter http://UnivReprog/ in your browser, but only after waiting a few minutes for the Universal Reprogrammer II to register itself on the network. Alternately, look at the logs for your network DHCP server.
- Use recovery mode to verify the Universal Reprogrammer II has the correct settings.

If all else fails...

Please contact technical support at (570) 587-7082. If technical support finds it necessary for the unit to be returned for repair, you will be asked for your contact information and then provided with a Return Merchandise Authorization number (RMA#) that will be used to track the unit through the repair department back to you. Please write this number on the outside of your shipping box so it can be routed to the correct department. If the necessary repair is not covered under warranty, you will be contacted for payment arrangements.

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